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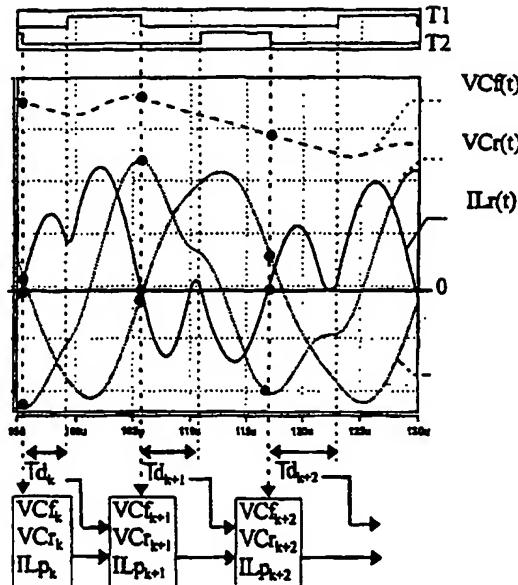
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## (54) Device and method for electrical regulation with optimal control

(57) Method for regulating a converter having transistors, in which the value of a number  $N_1$  of state variables ( $V_{cf}$ ,  $V_{cr}$ ,  $I_{Lp}$ ) is measured and stored, then action is carried out on a number  $N_2$  of control variables ( $T_{dk}$ ,  $T_{dk+1}$ ,  $T_{dk+2}$ ).  $N_1$  being greater than  $N_2$ , the value of the control variables is calculated, at a given instant, for a number  $P$  of periods such that the product of  $N_2$  multiplied by  $P$  is greater than or equal to  $N_1$ .

FIG.4



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 98 30 7257

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	US 5 600 234 A (HASTINGS ROY A ET AL) 4 February 1997 (1997-02-04) * abstract; figure A *	1,7	H02M3/337
A	EP 0 605 330 A (UNITE HERMETIQUE) 6 July 1994 (1994-07-06) * column 3, line 56 - column 4, line 36; figure 1 *	1,7	
A	US 4 992 919 A (LEE) 12 February 1991 (1991-02-12) * the whole document *	1,7	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H02M
<p>The present search report has been drawn up for all claims</p>			
Place of search  THE HAGUE	Date of completion of the search  10 April 2001	Examiner  Gentili, L	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 98 30 7257

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The members are as contained in the European Patent Office EDP file on  
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Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 5600234	A	04-02-1997	JP	8275510 A	18-10-1996
-----					
EP 0605330	A	06-07-1994	FR	2700081 A	01-07-1994
			DE	69317751 D	07-05-1998
			DE	69317751 T	23-07-1998
			DK	605330 T	19-10-1998
			ES	2114022 T	16-05-1998
			HK	1008967 A	21-05-1999
			US	5592368 A	07-01-1997
-----					
US 4992919	A	12-02-1991		NONE	
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